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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,419	04/16/2004	Joseph Ferrara	16-605	9852

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EXAMINER

GREENHUT, CHARLES N

ART UNIT PAPER NUMBER

3652

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/826,419

Applicant(s)

FERRARA, JOSEPH

Examiner

Charles N. Greenhut

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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I. Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim(s) 1-3 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ONO in view of MITCHELL (US 7,010,388 B2).

1.1. With respect to claims 1-3, ONO discloses a first and second load lock (31)/(32) in a housing, having two side entrances (G1)/(G2) at different angles, allowing access from two different directions (that of 12a and 14), and a support (L1-25), valve (E) processing station (1), robot (12a), and aligner (Fig. 14A-15B). ONO fails to teach the openings facing the atmosphere at different angles for access from different directions. MITCHELL'388 teaches a load lock (L3) having openings (V1)/(V2) positioned at different angles to allow access from different directions (of 148/146). It would have been obvious to one of ordinary skill in the art to modify ONO with the additional angled opening of MITCHELL'388 in order to increase throughput of the system.

2. Claim(s) 4-5 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ONO in view of MITCHELL (US 6,350,097 B1).

2.1. With respect to claim 4-5, ONO fails to teach the load locks spaced vertically. MITCHELL'097 teaches the load locks spaced vertically (3)/(4) and the robot having two end effectors (22)/(29) that can be raised and lowered (Col. 5 Li. 23-26). It would

have been obvious to one of ordinary skill in the art to modify ONO with the multiple arms of MITCHELL'097 in order to increase throughput.

3. Claim(s) 6 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ONO in view of SOEJIMA (US 6,024,800 A) and further in view of in view of MITCHELL (US 7,010,388 B2).

3.1. With respect to claim 6, ONO discloses a first and second load lock (31)/(32), enclosure (1), and first robot (12a) moving in an arc. ONO fails to disclose multiple other robots and each load lock having two access openings, and a third access opening. SOEJIMA teaches load lock (11) having two access openings (Col. 3 Li. 53-58) and a third access opening (11b), and multiple other robots (40)/(50). It would have been obvious to one of ordinary skill in the art to modify ONO with the load locks of SOEJIMA in order to increase throughput. ONO fails to teach the openings facing the atmosphere at different angles for access from different directions. MITCHELL'388 teaches a load lock (L3) having openings (V1)/(V2) positioned at different angles to allow access from different directions (of 148/146). It would have been obvious to one of ordinary skill in the art to modify ONO with the additional angled opening of MITCHELL'388 in order to increase throughput of the system.

4. Claim(s) 7-12 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ONO in view of SOEJIMA and further in view of MITCHELL'097.

4.1. With respect to claims 7-12 ONO additionally teaches the opening allowing insertion along different paths and moving in an arc. MITCHELL'097 teaches the load locks spaced vertically (3)/(4) and the robot having two end effectors (22)/(29) mounted to

a carriage (Fig. 1) that can be raised and lowered (Col. 5 Li. 23-26) perpendicular (23) to wafers (12). It would have been obvious to one of ordinary skill in the art to modify ONO with the multiple arms of MITCHELL'097 in order to increase throughput.

5. Claim(s) 13-18, 20, and 22-25 is/are rejected under 35 U.S.C. 102(b) as being unpatentable over MITCHELL (US 6,350,097 B1) in view of MITCHELL (US 7,010,388 B2).

5.1. With respect to claims 13-15, 20, 22-24 MITCHELL'097 discloses providing a low pressure robot having two end effectors (22)/(29), aligning a wafer (40), moving an unprocessed wafer to a first load lock (Col. 6 Li. 18-19), lowering the pressure (41), removing the unprocessed wafer (42), with one end effector (29), and moving it to a processing station having a chuck (45) that attracts and reorients the wafer (46)/(Col. 6 Li. 39-42), while placing a processed wafer with a second end effector (22) into one load lock (43), raising the pressure (52), and inserting an additional wafer (Col. 6 Li 65 et. seq.) before removing the processed wafer (Col. 6 Li. 59-60) from the same load-lock into which it was inserted (Col. 6 Li. 52-53) wherein alternate wafers are placed in alternate load locks (Fig. 5). MITCHELL'097 fails to teach the openings facing the atmosphere at different angles for access from different directions. MITCHELL'388 teaches a load lock (L3) having openings (V1)/(V2) positioned at different angles to allow access from different directions (of 148/146). It would have been obvious to one of ordinary skill in the art to modify ONO with the additional angled opening of MITCHELL'388 in order to increase throughput of the system.

5.2. With respect to claim 16-18, MITCHELL'097 additionally discloses one load lock (3) above the second load lock (4), moving the collinearly mounted (Fig. 4) end effectors up and down (Col. 5 Li. 24-26) via a drive motor (39).

5.3. With respect to claim 25, MITCHELL'097 discloses a first and second load lock (3)/(4) in a housing, low pressure robot having two end effectors (22)/(29), a second in-air robot (16), pump (Fig. 5), and inherently discloses a controller for causing the movements of the robots. MITCHELL'097 fails to teach the openings facing the atmosphere at different angles for access from different directions. MITCHELL'388 teaches a load lock (L3) having openings (V1)/(V2) positioned at different angles to allow access from different directions (of 148/146). It would have been obvious to one of ordinary skill in the art to modify MITCHELL'097 with the additional angled opening of MITCHELL'388 in order to increase throughput of the system.

6. Claim(s) 19 and 21 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over MITCHELL'097 in view of SOEJIMA .

6.1. With respect to claim 19 and 21, MITCHELL'097 additionally discloses the first and second load locks have access openings at an angle with respect to each other and placing an unprocessed wafer on and removing it from an aligner. MITCHELL'097 fails to teach multiple in air robots. SOEJIMA teaches multiple in air robots. It would have been obvious to one of ordinary skill in the art to modify MITCHELL'097 with the multiple robots of SOEJIMA in order to increase throughput.

II. Response to Applicant's Arguments

Applicant's arguments entered 4/27/06 have been fully considered but are not persuasive.

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1. Applicant argues that claims 1, 6, 13, and 25, as amended, are patentable over the prior art because the prior art does not teach a housing having two load locks and load locks having openings at different angles for access by different atmospheric robots. This argument is not persuasive. ONO (Claims 1 & 6) and MITCHELL'097 (Claims 13 & 25) disclose first and second load locks within a housing and MITCHELL'388 (Figs. 5-6) teaches the modification of arranging the openings at an angle to allow access by multiple atmospheric robots.

III. Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
2. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles N. Greenhut whose telephone number is (571) 272-1517. The examiner can normally be reached on 7:30am - 4:00pm EST.

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4. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.
5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CG



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